

REMARKS/ARGUMENTS

In response to the above identified Office Action, Applicants respectfully request reconsideration in view of the aforementioned amendment and the following remarks.

I. Objection to Claims 1-12

Examiner objects to claims 1-12 because Examiner believes the phrases of “actuator” and “encourage” of claim 1, and “fluid” of claim 6 are erroneous. In response, Applicants respectfully disagree because the phrases of “actuator” and “encourage” in claim 1 correctly state the scope of protection Applicants intend to obtain. First, “actuator” may refer to, for example, a liquid pump or a vapor compressor, as demonstrated in claim 3. Thus, “actuator” has a broader meaning than “pump”. Second, the phrase “encourage,” for instance, is defined in general as “to stimulate by assistance” or “to promote.”¹ Here, this phrase is to cause the substance within the actuator to change state either from liquid to vapor, or from vapor to liquid. Hence, “encourage” has a broader meaning than “pumping”. Last but not least, the language “fluid” in claim 6, for example, refers to a combination of vapor and liquid.² This definition is further supported by Dictionary.com³ and properly represents the scope of protection Applicants intend to pursue. As a result, “fluid” has a broader meaning than “liquid”. Consequently, Applicants would like to maintain the phrases of “actuator” and “encourage” in claim 1 and “fluid” in claim 6. Accordingly, Applicants respectfully request reconsideration and withdrawal of these objections.

II. Claims Rejected Under 35 U.S.C §102(b)

A. Examiner rejects to claims 1-14 and 16-21 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,381,650 issued to Mount (“Mount”). To anticipate a claim, Examiner must show that the cited reference teaches each element of a claim.

¹ <http://reference.dictionary.com>.

² See [0052] of the Specification – “the liquid/vapor combination (fluid).”

³ <http://reference.dictionary.com> - “fluid” is defined as “a substance, as a liquid or gas, that is capable of flowing and that changes its shape at a steady rate when acted upon by a force tending to change its shape.”

Mount teaches “a method and control system for operating a vapor compression refrigeration system to prevent oil pump cavitation during startup of the refrigeration system” (Mount, Abstract). However, Mount does not teach “a thermoelectric module,” as recited in claim 1. In the Office Action, Examiner relies on a microprocessor 4 in Mount, that “continuously receives electrical signals during start up indicating the temperature or pressure of the refrigerant in the evaporator 3 from the temperature probe 12 or the pressure sensor 14” to teach a thermoelectric module (Mount, column 5, lines 20-35). However, thermoelectric modules are known by those of ordinary skill in the art as “solid-state devices that convert electrical energy into a temperature gradient, known as the ‘Peltier effect’ or convert thermal energy from a temperature gradient into electrical energy, the ‘Seebeck effect’.”⁴ [0039] of Applicants’ Specification also lends support to this interpretation. The microprocessor 4 disclosed in Mount is only a data processing device, not an energy conversion device. As a result, Mount does not teach a thermoelectric module.

Further, even if a thermoelectric module were added to Mount, Mount would still fail to teach the thermoelectric module as being coupled to the actuator, “the module to encourage the substance *within the actuator* to change physical state,” as recited in claim 1. In Fig. 1 of Mount, the changing of physical state from gas to liquid or from liquid to gas occurs either in the condenser 2, or in the evaporator 3. Both devices are *outside* the compressor 1. In contrast, the substance of claim 1 changes its physical state while it is *within* the actuator (e.g. a compressor). Consequently, Applicants respectfully request reconsideration and withdrawal of the § 102(b) rejection of claim 1.

With respect to independent claim 6, this claim recites “condensing vapor of the fluid as it is present in the pump or evaporating liquid of the fluid as it is present in the compressor.” Mount does not teach this element of claim 6. In Mount, any changing of the physical states of the oil is outside of the pump or the compressor. Consequently, Applicants respectfully request reconsideration and withdrawal of the § 102(b) rejection of claim 6.

⁴ <http://www.electracool.com/basics.htm>.

B. Examiner rejects claims 13-15 and 22 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,402,479 issued to Lagedamount et al. ("Lagedamount"). In response, Applicants respectfully disagree for the following reasons.

Lagedamount teaches an apparatus that pumps air out of transfer chambers for transferring semiconductor equipment (Lagedamount, column 1, lines 5-7). However, Lagedamount does not teach "a thermoelectric module." In the Office Action, Examiner relies on the control apparatus 5 (described in Fig. 1 of Lagedamount) to teach the thermoelectric module. Thermoelectric modules as interpreted by one of ordinary skill in the art are "solid-state devices that convert electrical energy into a temperature gradient, known as the 'Peltier effect' or convert thermal energy from a temperature gradient into electrical energy, the 'Seebeck effect'." The control apparatus as disclosed in Lagedamount, on the other hand, only controls the pumping speed of the primary pump and performs no meaningful energy conversion (Lagedamount, column 3, lines 30-33).

Similarly, Lagedamount also fails to teach "the cooler or heater to cause the fluid as it is *within the pump or the compressor* to change between a vapor and a liquid state," as recited in claim 13. In Lagedamount, the primary pump is to adapt its pumping speed in order "*to avoid any condensation or solidification of the gases in the airlock or transfer chamber*" (emphasis added) (Lagedamount, Abstract). The airlock or transfer chamber 1 (Lagedamount, Fig. 1, element 1), however, is located *outside* the primary pump. Therefore, the condensation or solidification (i.e. change between a vapor and a liquid state) takes place *outside* the pump or the compressor. This interpretation is further supported by Examiner's statement in the Office Action, in which Examiner states that Applicants' *actuator* is depicted by isolation enclosure 18. Even if one were to adopt this view, the airlock or transfer chamber 1 is still *outside* of the isolation enclosure 18. Hence, it is impossible for Lagedamount to teach "the cooler or heater to cause the fluid as it is *within the pump or the compressor* to change between a vapor and a liquid state," as recited in claim 13.

Further, Lagedamount fails to teach "a heat source in a computer coupled to the pump or the compressor, the heat source is to be *cooled* by the operation of the pump or the compressor," as recited in claim 13. In the Office Action, Examiner relies on column 3 of Lagedamount to

teach this element of claim 13. However, the sections relied on by Examiner teach away from claim 13 because these sections of Lagedamount teach maintaining temperatures so that condensation or solidification does not occur – “It is known that such *condensation* or solidification *occurs only below a determined temperature threshold*, and it is then possible to maintain the pumping speed at a value that is low enough *to remain above the temperature threshold*” (emphasis added) (Lagedamount, column 3, lines 53-57). In other words, the heat source in Lagedamount is *to be heated* so that the temperature would not drop below the threshold. As a result, Lagedamount here teaches away from claim 13. Consequently, Applicants respectfully request reconsideration and withdrawal of the § 102 (b) rejection of claim 13.

Any dependent claims not mentioned above are submitted as not being anticipated or obvious, for at least the same reasons given above in support of their base claims.

It should be noted that not all of the assertions made in the Office Action, particularly those with respect to the dependent claims, have been addressed here, in the interest of conciseness. Applicants reserve the right to challenge any of the assertions made in the Office Action by the Examiner, with respect to the relied upon art references and how they would relate to Applicants’ claim language.

CONCLUSION

In view of the foregoing, it is submitted that claims 1-22 patentably define the subject invention over the cited references of record, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes a telephone conference would be useful in moving the case forward, he is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly, extension of time fees.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail with sufficient postage in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P. O. Box 1450, Alexandria, Virginia 22313-1450 on March 6, 2007.


Jean Svoboda